UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 22 1996

SE-5J

MEMORANDUM

DATE:

SUBJECT: **ACTION MEMORANDUM** - Determination of Threat to Public Health and the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID # **YT**)

FROM: V.J. Simon, On-Scene Coordinator V. S. Simon
Emergency and Enforcement Response Branch

TO: William E. Muno, Director
Superfund Division

I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the presence of thorium at the Lindsay Light II site. Currently, Lindsay Light II is a public parking lot, which is paved with asphalt, that has gamma levels as high as 252 times background or 1.1 milliRoentgen per hour[1]. A person using the parking lot could receive a 10^{-4} risk with as little as 29 minutes exposure per day for a 250 day work year at the point of peak exposure.

Uranium and thorium soil concentrations have been measured to a limited extent and exceed background soil levels up to 43 and 812 times, respectively. From this data, radium levels can be projected. Assuming cleanup to the radium levels of Title 40, Part 192, of the Code of Federal Regulations (CFR), uranium and thorium mill tailings standards, present peak values would exceed cleanup levels by 222 times. The radium cleanup level in 40 CFR 192 is 5 picoCuries per gram.

In May 1994, an extent of contamination study was conducted by the property owner, The Chicago Dock & Canal Trust, as required by an Administrative Order by Consent (AOC) dated January 27, 1994. A major result from this study was that there were areas exhibiting elevated gamma levels as high or higher than U.S. EPA

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[1] For gamma radiation, milliRoentgen and millirem are numerically equal.

had previously detected which could be abated by removing thorium. It is anticipated that removal of the thorium will be undertaken pursuant to a Unilateral Administrative Order (UAO) by the potentially responsible parties (please see confidential enforcement addendum). The response activities will require approximately 60 on-site days to complete.

This site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

A. Physical Location

The Lindsay Light II Site, a public parking lot, is located at 316 East Illinois Street, Chicago, Cook County, Illinois. This 3-acre Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive and is situated in an urban area called the Gold Coast. This property is surrounded by commercial and residential buildings with a shopping mall located approximately 200 feet to the southeast. The Chicago River is located 1 mile south of the Site and Lake Michigan is about 1.5 miles east of the Site. This Site is surrounded by two-foot high steel guardrails; however, it does not totally restrict access. It is possible to step over the guardrails if you want to gain entry to the parking lot or use it as a short-cut. Also, there are two automated ticket entrances and two manned cash booths.

B. Site description and background

The Lindsay Light II Site was once occupied by the Lindsay Light and Chemical Company, which made incandescent gas mantles for home and street lighting. Earlier reports show this company first imported and then manufactured mantles. These activities occurred from at least 1910 until 1936 at 161 East Grand, which is .25 miles west of the Site. It is unclear what Lindsay Light actually did at 316 East Illinois; however, records from the Dock and Canal Trust indicate this site was a stable, and that Lindsay Light leased portions of the building from Chicago Dock and Canal Trust from 1915-1933. Sometime after 1933, Lindsay Light moved to West Chicago, Illinois and was later purchased by American Potash, who in turn was purchased by Kerr-McGee Chemical Company.

Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate and small amounts of cerium, beryllium and magnesium nitrates. The principal ingredient in thorium nitrate is radioactive thorium, specifically, thorium-232 and thorium-228. Thorium-232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. Thorium-228 has a 2 year half-life. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

C. Current site conditions

Conditions have not changed since the site assessment on June 3, 1993. This property is still operated as a public parking lot.

D. Other actions to date

From June 30, 1993 to July 30, 1993, each manned cash booth was monitored by a thermoluminescent dosimeter (TLD) badge. TLD results for these booths were as follows:

TLD #	
9035	0.00058 millirem per hour or about 1.2 millirem per year
9036	-0.00184 millirem per hour or -3.7 millirem per year (which means all values are effectively zero)

These results were compared to NRC regulations in the new Title 10, Part 20.1301, Code of Federal Regulations of 100 millirem per year and 2 millirem per hour for individual members of the general public. The above results did not exceed either of these relevant levels indicating that the attendants are not in any present danger.

During May 1994, field work necessary for the AOC-required extent of contamination study was conducted. This study was later submitted in a final report which was approved by U.S.EPA on March 13, 1996. A brief summary of the report would be as follows: **12** areas exhibiting elevated gamma levels, maximum contamination depth extends to **2.5** meters (**8** feet) below the ground surface, and Resource Conservation and Recovery Act (RCRA) characteristic waste is **not** present on-site. The map included in this report has been reproduced in Figure 1 to show the 12 contaminated areas. Also during this two year period, The Chicago Dock & Canal Trust voluntarily placed notices at the entrances to the parking lot informing patrons of the risks associated with the lot.

The City of Chicago, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety (IDNS) are aware of site conditions and plans described in this Action Memorandum.

III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Lindsay Light II site present an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

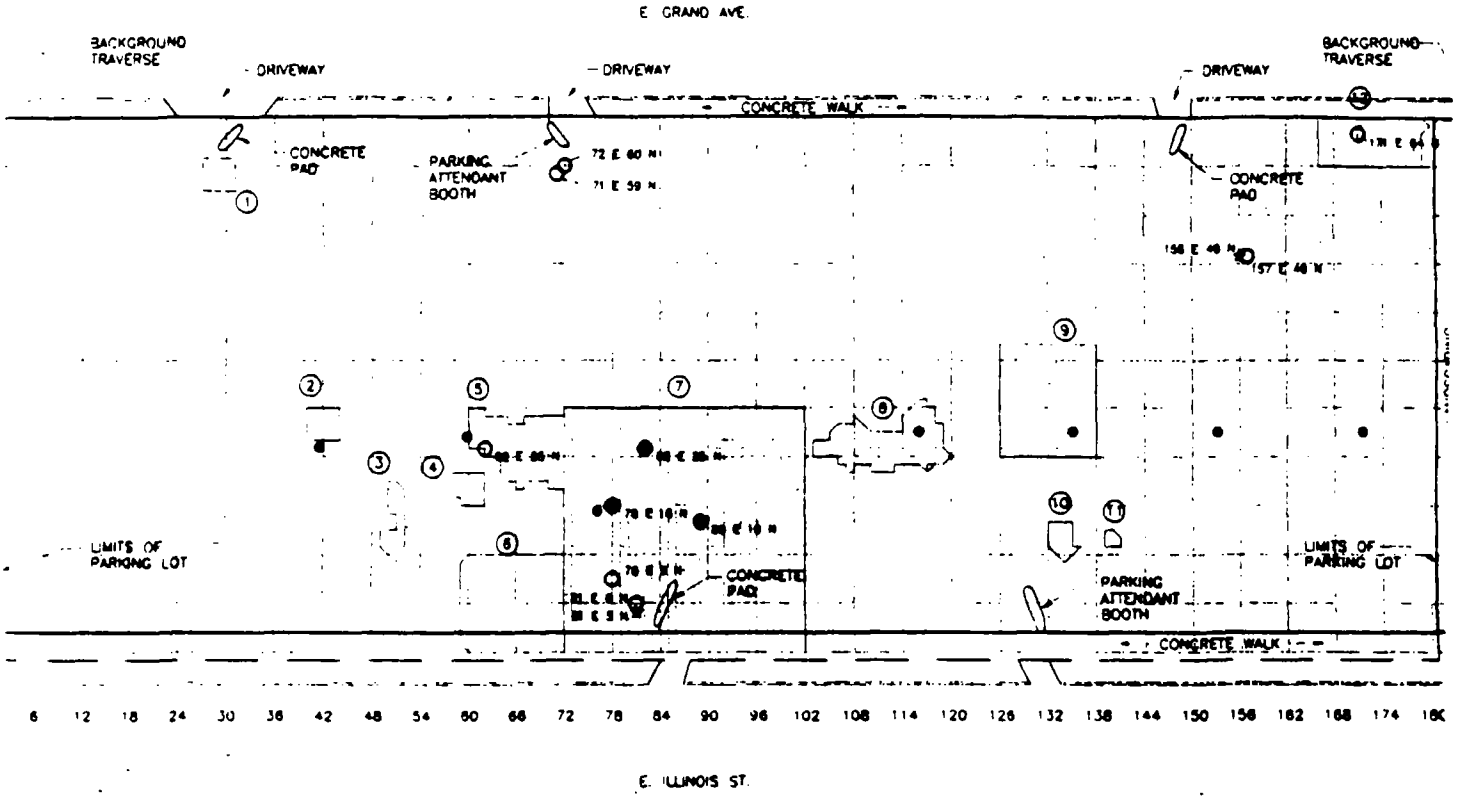


Figure 1: Extent of Contamination Map reproduced from Final Report prepared by STS Consultants, Ltd. (Deerfield, Illinois) to satisfy Administrative Order by Consent No. V-W-94-C-22

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the existence of a public parking lot on property found to have gamma readings measured as high as 1.1 milliRoentgen per hour. This reading is 252 times the background level measured for the site.

Gamma rays are penetrating radiation indistinguishable from X-rays which can be absorbed by tissue in the human body, thereby increasing the cancer risk for the person exposed. The excess risk to a transient spending 29 minutes per day for a 250 day work year at this peak exposure spot is 10^{-4}. Transients were judged to be parking lot customers, people using the lot for a short cut or temporary workers.

The excess risk to a parking lot attendant spending an 8 hour shift for 250 days per work year at this peak spot is 2×10^{-3}. Direct measurements with survey instruments at the present parking lot attendant stations found background radiation levels and these were confirmed with longer measurements using TLDs. There is no guarantee these stations could not be moved to the peak point at some future time, thereby introducing the potential for exposure and risk to be actualized.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

The presence of elevated gamma exposure levels at the site validates subsurface deposits of radiological contaminants. The dominant concern is intrusion into these materials that will contaminate the intruder and their equipment and, further, lead to dispersal or spreading of the contaminants from its present locations. Such a scenario probably has arisen, and could again arise, with parking lot excavation where workers and their equipment are contaminated by radioactive soils, dry soil is dispersed in the wind and excavation spoils are moved offsite. The number of people exposed could be greatly increased and might include workers, their families if contaminants are carried home, workers who subsequently use contaminated machinery, residents near the parking lot who might be subject to wind dispersed soils and users of excavation spoils. Such spreading could occur within downtown Chicago where the parking lot is located and out for several miles depending upon where workers reside and where spoils are used. This is a plausible scenario since recent plans were to build a large hospital building on this site.

c) other situations or factors which may pose threats to public health or welfare or the environment:

This factor is present at the Site due to the property's potential for future development. Such construction might entail excavating into potentiallly contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants. Also, it has not been determined whether subsurface contaminants are soluble. If they are there could be spreading via groundwater.

This site appears to be gridded with sewer lines. The sewers could be conduits for the spread of both soluble and insoluble materials offsite, for extension of the region of contamination and for an increase in the potential for workers (sewer workers) to be exposed.

IV. ENDANGERMENT DETERMINATION

Given the nature of the Site, with unrestricted access to contaminants, the nature of these contaminants - gamma rays, which can not be stopped but attenuated; and an exposure pathway of direct contact, as described in Sections II and III, the actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action described in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS

Removal activities at the Site are to include: removal of contamination from at least 12 areas in the parking lot and disposal of all characterized wastes identified and generated during removal activities.

Specifically, the following activities will be necessary:

1) Develop and implement site health, safety and security measures.

2) Develop and implement air monitoring program.

3) Remove contamination until the cleanup criterion of 5 picoCuries per gram total radium (radium-226 + radium-228) over background is achieved. This cleanup criterion will be met in each 15 centimeter layer below the surface. Averaging over areas up to 100 square meters will be allowed, but only after reasonable efforts have been made to achieve levels As Low As Reasonably Achievable (ALARA). It is not U.S. EPA's intent to leave any elevated areas of contamination if at all possible.

4) Establish local background for radium-226 and radium-228 from four soil samples taken on the property at points where the

gamma exposure rates are lowest plus eight soil samples taken off-site, but in the immediate vicinity, of the parking lot.

5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA/IDNS approved disposal facility in accordance with the U.S. EPA Off-Site Rule (58 F.R. 49200).

6) Conduct off-site surveying and sampling as necessary and, at a minimum, implement 40 CFR 192, if deemed necessary should contamination be discovered beyond current site boundaries.

7) Backfill all excavations with suitable material, and if soil, test borrow source for radioactivity and other pertinent characteristics in 40 CFR Part 261.

Removal activities will require approximately 60 on-site working days to complete. The threat posed by continual gamma-ray exposure meets the criteria listed in Section 300.415(b)(2) of the NCP and are consistent with any long-term remedial action which may be required.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of the removal should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements(ARARS)

All applicable or relevant and appropriate requirements(ARARS) of Federal law will be complied with to the extent practicable.

The primary Federal ARAR for soil cleanup criteria is Title 40, Part 192, of the Code of Federal Regulations, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings". Ancillary ARARs include the NRC's Title 10, Part 20, of the Code of Federal Regulations,"Standards for Protection Against Radiation", NRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors", and the Department of Transportation's Title 49 for shipping hazardous materials. Also, many of the regulations carried out by NRC have been delegated to IDNS.

U.S. EPA is awaiting a waste designation from IDNS. Once IDNS classifies the waste, U.S. EPA will incorporate that information into remediation of the Site. IDNS has state jurisdiction over the radiological contamination at the site.

In accordance with the revised NCP, Section 300.825(a)(1), a list of State ARARs will be added to the administrative record.

VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Delayed or non-action may result in increased likelihood of direct contact threat to human populations accessing and working on the Site. Also, since there is no threshold for cancer the continued exposure to gamma rays will increase the cancer risk.

VII. OUTSTANDING POLICY ISSUES

The proposed action may result in U.S. EPA re-examining its position on the Lindsay Light I site, which is the building described in Section IIB. This building is also thorium-contaminated; however, gamma levels above background can not be detected outside the building. The only persons exposed to the contamination are occupants or visitors to this building. The Lindsay Light I site was referred to the Occupational Safety and Health Administration (OSHA) at two different times but they are constrained by their regulations.

VIII. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action. You may indicate your decision by signing below:

APPROVE: Wm. E. Muno 4/22/96
DIRECTOR, SUPERFUND DIVISION

DISAPPROVE: _____
DIRECTOR, SUPERFUND DIVISION

Enforcement Confidential Addendum

Three Attachments

1. Action Memorandum dated July 11, 1994
2. Action Memorandum dated October 5, 1995
3. Index to the Administrative Record

cc: E. Watkins, U.S. EPA HQ, 5202G
D. Henne, U.S. Department of Interior
G. King, IEPA Superfund Coordinator
J. Klinger/T.Runyon, Illinois Department of Nuclear Safety
L. Robinson, City of Chicago

ENFORCEMENT ADDENDUM

Redacted - not relevant to the selection of the removal action.

ATTACHMENT 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

MEMORANDUM

DATE: JUL 11 1994

SUBJECT: **ACTION MEMORANDUM** - Determination of Threat to Public Health or the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID #ZA)

FROM: Verneta J. Simon, On-Scene Coordinator
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director
Waste Management Division

THRU: Jodi L. Traub, Acting Associate Division Director
Office of Superfund

I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the existence of elevated gamma levels as high as 280 microRoentgen per hour (uR/hr) at the Lindsay Light II Site, a public parking lot located at 316 East Illinois Street in Chicago, Illinois.

Potentially Responsible Party (PRP) lead response actions are being taken pursuant to an Administrative Order by Consent (AOC) (please see confidential enforcement addendum). These response actions essentially require an extent of contamination study which will help determine the scope of future response actions. Currently, the parking lot is covered with asphalt and/or concrete and persons parking at this lot are not expected to be exposed long enough to be adversely affected by the gamma rays emitted. The gamma ray exposure received by parking lot attendants and any long-term area transients may pose an imminent and substantial threat to public health.

This site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

A. Physical Location

The Lindsay Light II Site, a public parking lot, is located at 316 East Illinois Street, Chicago, Cook County, Illinois. This 3-acre Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive and is situated in a urban area called the Gold Coast. This property is surrounded by commercial and residential buildings with a shopping mall located approximately 200 feet to the south east. The Chicago River is located 1 mile south of the Site and Lake Michigan is about 1.5 miles east of the Site. This Site has the usual metal barricades for a parking lot; however, it does not totally restrict access. It is possible to step over the barricades if you want to gain entry to the parking lot or use it as a short-cut.

B. Site description and background

The Lindsay Light II Site was once occupied by the Lindsay Light Chemical Company, which made incandescent gas mantles for home and street lighting. Earlier reports show this company first imported and then manufactured mantles. These activities occurred from at least 1910 until 1936 at 161 East Grand, which is .25 miles from the Site. It is unclear what Lindsay Light actually did at 316 East Illinois, however, records from the Chicago Dock and Canal Trust indicate this site was a stable, and that Lindsay Light leased portions of the building from Chicago Dock and Canal Trust from 1915-1933. Sometime after 1933, Lindsay Light moved to West Chicago, Illinois and was later purchased by American Potash, who in turn, was purchased by Kerr-McGee Chemical Company.

Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate and small amounts of cerium, beryllium and magnesium nitrates. The principal ingredient in thorium nitrate is radioactive thorium, specifically, thorium-232. Thorium-232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

C. Current site conditions

Conditions have not changed since the site assessment on June 3, 1993. This property is still operated as a public parking lot with attendants stationed as shown on Figure 1.

D. Other actions to date

From June 30, 1993 to July 30, 1993, two thermoluminescent dosimeter(TLD) badges were placed in the ticket booths shown in Figure 1. TLD results for these locations were as follows:

TLD #	
9035	0.00058 millirem per hour or about 1.2 millirem per year
9036	-0.00184 millirem per hour or -3.7 millirem per year (which means all values are effectively zero)

These results were compared to the Nuclear Regulatory Commission (NRC) regulations in the new Title 10, Part 20.1301, Code of Federal Regulations of 100 millirem per year and 2 millirem per hour for individual members of the general public. The above results did not exceed either of these relevant levels.

The City of Chicago, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety are aware of site conditions and plans described in this Action Memorandum.

III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Lindsay Light II site may pose an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan(NCP), 40 CFR 300.415 (b)(2). These factors include:

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the existence of a public parking lot on property found to have gamma readings measured as high as 280 microRoentgen per hour (uR/hr) on a Ludlum Model 19 Micro-R meter. This reading is 14 times the background level, 20 uR/hr, measured for the site.

Gamma rays are penetrating radiation indistinguishable from X-rays which can be absorbed by tissue in the human body, thereby increasing the cancer risk for the person exposed. The excess risk to a transient spending 1 hour per day for a 250 day work year at this peak exposure spot is 5×10^{-5}. Transients were judged to be parking lot customers, people using the lot for a short cut or temporary workers. Such a risk is not justified by personal benefit to the transient nor by societal benefit.

The excess risk to a parking lot attendant spending an 8 hour shift for 250 days per work year at this spot is 3×10^{-4}. Again, such an exposure entails cancer risk that would have no personal or societal benefit. Direct measurements with survey instruments at the present parking lot attendant stations found background radiation levels and these were confirmed with longer

measurements using thermoluminescent dosimeters (TLDs). There is no guarantee these stations could not be moved to the peak point at some future time, thereby introducing the potential for exposure and risk to be actualized.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

The presence of elevated gamma exposure levels at the site validates subsurface deposits of radiological contaminants. The dominant concern is intrusion into these materials that will contaminant the intruder and their equipment and, further, lead to dispersal or spreading of the contaminants from its present locations. Such a scenario probably has arisen, and could again arise, with parking lot excavation where workers and their equipment are contaminated by radioactive soils, dry soil is dispersed in the wind and excavation spoils are moved offsite. The number of people exposed could be greatly increased and might include workers, their families if contaminants are carried home, workers who subsequently use contaminated machinery, residents near the parking lot who might be subject to wind dispersed soils and users of excavation spoils. Such spreading could occur within downtown Chicago where the parking lot is located and out for several miles depending upon where workers reside and where spoils are used. This is a plausible scenario since recent plans were to build a large hospital building on this site.

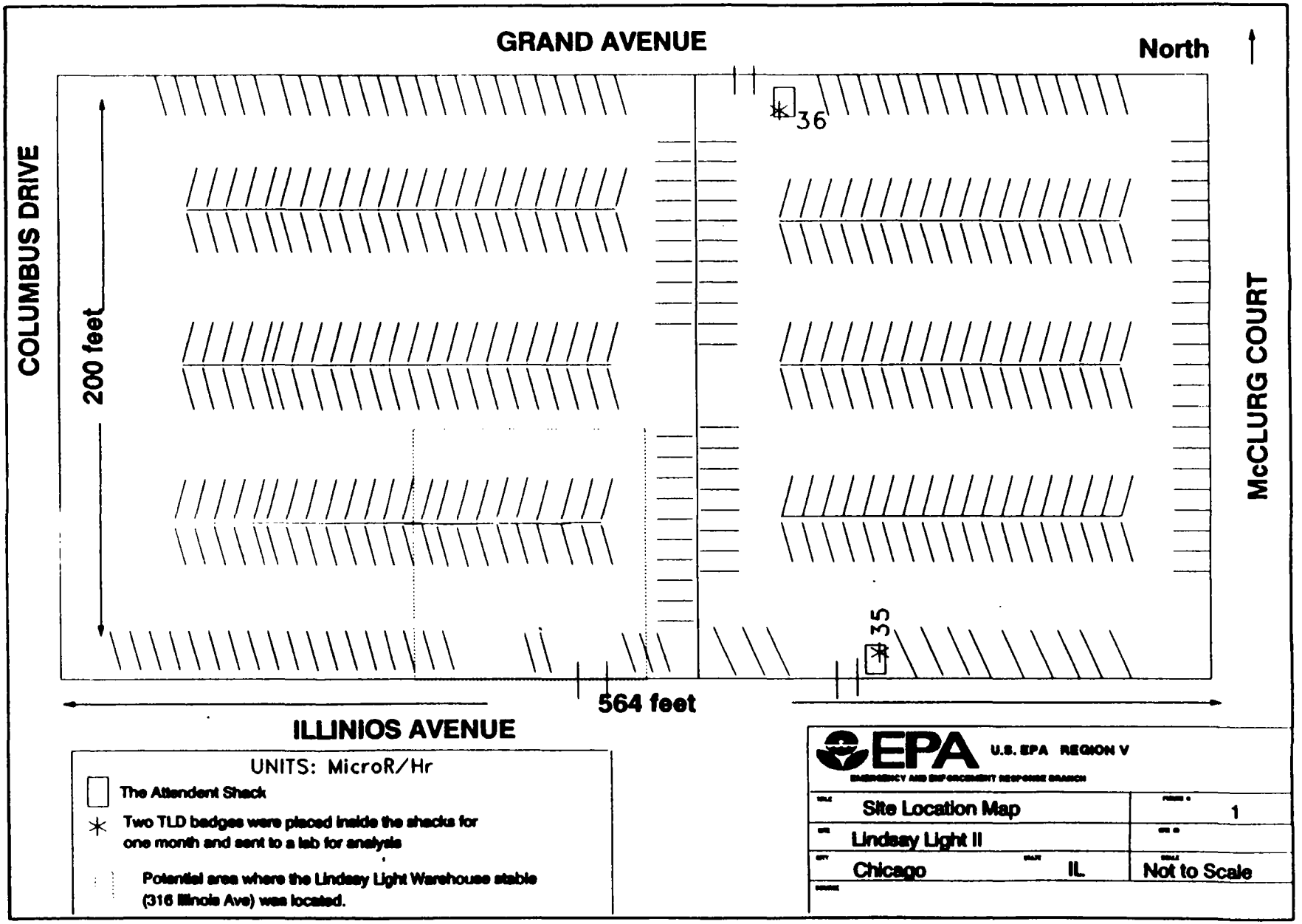
c) other situations or factors which may pose threats to public health or welfare or the environment

This factor is present at the Site due to the property's potential for future development. Such construction might entail excavating into potential contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants. Also, it has not been determined whether subsurface contaminants are soluble. If they are there could be spreading via groundwater.

This site appears to be gridded with sewer lines. These could be conduits for the spread of both soluble and insoluble materials offsite, for extension of the region of contamination and for an increase in the potential for workers (sewer workers) to be exposed.

IV. ENDANGERMENT DETERMINATION

Given the nature of the Site, with unrestricted access to contaminants, the nature of these contaminants - gamma rays, which can not be stopped but attentuated; and an exposure pathway of direct contact, as described in Section II and III, the actual or threatened releases of hazardous substances from this Site, if


GRAND AVENUE
North
COLUMBUS DRIVE
200 feet
McCLURG COURT
36
35
564 feet
ILLINIOS AVENUE
UNITS: MicroR/Hr
The Attendent Shack
Two TLD badges were placed inside the shacks for one month and sent to a lab for analysis
Potential area where the Lindsay Light Warehouse stable (316 Illinois Ave) was located.
EPA
U.S. EPA REGION V
Site Location Map
1
Lindsay Light II
Chicago
IL
Not to Scale

not addressed by implementing the response action described in this Action Memorandum, may pose an imminent and substantial endangerment to public health, or welfare, or the environment due to the exposure to gamma rays, of parking lot attendants and/or site transients, which are above U.S. EPA's acceptable excess carcinogenic risk of $1x10^{-4}$.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

Pursuant to the AOC, the PRP intends to undertake the following actions to determine the extent of the contamination of the Site:

1) Develop and implement site health and safety plan.

2) Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.

3) Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.

4) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the PRP to correlate subsurface radiation levels and radionuclide content.

5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of future response actions should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements(ARARS)

All applicable or relevant and appropriate requirements(ARARS) of

Federal law will be complied with to the extent practicable. A letter was sent to the Illinois Department of Nuclear Safety on June 21, 1993, requesting clarification on the waste designation any radiological material would be called. Their response was to classify waste from this site as "source" material and is contained in Attachment 1. Conversations held with representatives of the Illinois Environmental Protection Agency were that it was not necessary to send an ARARs letter to them since radiological matters are handled by the Illinois Department of Nuclear Safety, however, if it appears that any other issues occur during this action which are non-radiological an ARARs letter will be sent.

In accordance with the revised NCP, Section 300.825(a)(1), the response from the State to the request for ARARs will be added to the administrative record for this site once the response has been received and evaluated.

VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Delayed or non-action may result in increased likelihood of direct contact threat to human populations accessing and working on the Site. Also, since there is no threshold for cancer, the continual exposure to gamma rays will increase the cancer risk.

VII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

X. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE: Wm. E. Muno 7/11/94
DIRECTOR, WASTE MANAGEMENT DIVISION

DISAPPROVE: _____
DIRECTOR, WASTE MANAGEMENT DIVISION

Attachments: Enforcement Confidential Addendum
1. IDNS Letter Dated August 27, 1993
2. Index to the Administrative Record

cc: Terri Johnson, OS-210
Don Henne, U.S. Department of the Interior
Office of Environmnental Policy and Compliance
U.S. Custom House, Room 217
200 Chestnut Street
Philadelphia, PA 19106
Gary King, IEPA Superfund Coordinator

bcc: A. Baumann, HSRL-5J
R. Powers/R. Buckley, HSE-GI
R. Bowden. HSE-5J
J. Cisneros, HSE-5J
L. Fabinski, ATSDR, HSRL-5J
O. Warnsley, CRU, HSRLT-5J
T. Lesser, P-19J
F. Myers, MF-10J
EERB Read File (M. Johnson)
EERB Site File (SF Central File Room)
V. Simon, On-Scene Coordinator
M. Radell, ORC
D. Regel, HSE-5J
L. Glatstein, AT-18J
L.Jensen, AT-18J

KERR-McGEE CHEMICAL CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

August 25, 1995

Mr. Joseph G. Klinger
Head, Licensing Section
Division of Radioactive Materials
Department of Nuclear Safety
1035 Outer Park Drive
Springfield IL 62704

Subject: Classification of Radioactive Material at Lindsay Light II

Dear Mr. Klinger:

Kerr-McGee Chemical Corporation (KMCC) wishes to inform the Illinois Department of Nuclear Safety (IDNS) that additional information has been obtained which we believe supports reclassification of the materials associated with the Lindsay Light II site located at 316 East Illinois Street in Chicago, Illinois from "source" material to 11(e)2 "by-product" material.

The IDNS, in a letter dated August 27, 1993, to Mr. Rick Karl at Region 5 of the U.S. Environmental Protection Agency (EPA), recommended that the material at the 316 East Illinois location be classified as "source" material. In this letter the IDNS stated (1) that this classification was based on careful review of very limited information available at that time and (2) that the IDNS would inform the EPA if further information was obtained which altered this recommendation.

On December 9, 1993, Region 5 of the EPA, under Section 104(e) of CERCLA, requested KMCC to provide information concerning the Lindsay Light II site. In order to reply to this request, KMCC reviewed Lindsay Light Company records including board meeting minutes. This review has led us to the conclusion that a monazite processing operation was located on the Lindsay Light II site. Some excerpts and specific notations from Lindsay's meeting minutes (copies enclosed) follow:

a. September 8, 1914
The Board resolves to rent the building at 316-322 East Illinois Street from Chicago Dock & Canal Trust for manufacturing purposes for the period 1/1/15 through 4/30/20.

b. September 9, 1922
The Chairman tells the board that the lease on the "monazite refinery" on Illinois Street expires on 4/30/23. (No minutes could be found which mentioned the renewal of the lease on the 316 East Illinois Street building after the original expiration date of 4/30/20).

c. March 9, 1923
The Board resolved to renew the lease for the "chemical plant" at 316 E. Illinois Street for another year, through 4/30/24.

d. March 18, 1924
The Board resolved to extend the lease on the "monazite plant" for another two years, through 4/30/26. (Presumed to be the building at 316 East Illinois Street, based on the expiration time for the previous lease and the fact that Lindsay "owned" the gas mantle plant and office facility at 161 East Grand Avenue).

e. November 24, 1925
C. R. Lindsay, in a written report to the Board, discussed obtaining a contract for a by-product from Lindsay's Monazite Sand. He stated, "This will enable us to keep our Refinery going from now on at 100% increase in capacity for a year and a half. I therefore renewed our lease on the Illinois Street property for one year to May 1, 1927."

f. July 18, 1929
"The question of securing a new lease for the Chemical Plant after the present one runs out which expires May 1931 was brought up by Mr. Lindsay, Jr., and thoroughly discussed by the Directors. It was finally moved by Mr. Beste, seconded by Mr. Stabenau, and unanimously passed that a new lease be secured not to exceed two years in duration."

g. December 22, 1931
The Board discussed how to balance production between the West Chicago and Illinois Street plants. (They agreed to phase out production at the Illinois Street plant by transferring physical equipment to West Chicago).

Although some Board Meeting Notes were missing in the documents obtained from Chicago Dock & Canal Trust, KMCC feels that those summarized above and enclosed herewith provide sufficient proof that 316 E. Illinois Street housed Lindsay's monazite refinery. KMCC therefore requests that the IDNS reclassify the associated material from "source" to 11(e)2 "by-product" material and inform Region 5 of the EPA of this change.

Please direct any questions concerning this request to me by calling (405) 270-2671 or by writing to me at the above address.

Very truly yours,

R. A. Thompson
Project Manager

Enclosures

cc: C. R. Gardner, Chicago Dock & Canal Trust
R. A. Meserve, Covington & Burling
V. Simon, OSC, U.S. EPA
W. O. Green
M. S. Krippel
J. D. White
File CD 1.4-3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

MEMORANDUM

DATE: JUL 11 1994

SUBJECT: **ACTION MEMORANDUM** - Determination of Threat to Public Health or the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID #ZA)

FROM: for Verneta J. Simon, On-Scene Coordinator Frank Rollins
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director
Waste Management Division

THRU: Jodi L. Traub, Acting Associate Division Director
Office of Superfund

I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the existence of elevated gamma levels as high as 280 microRoentgen per hour (uR/hr) at the Lindsay Light II Site, a public parking lot located at 316 East Illinois Street in Chicago, Illinois.

Potentially Responsible Party (PRP) lead response actions are being taken pursuant to an Administrative Order by Consent (AOC) (please see confidential enforcement addendum). These response actions essentially require an extent of contamination study which will help determine the scope of future response actions. Currently, the parking lot is covered with asphalt and/or concrete and persons parking at this lot are not expected to be exposed long enough to be adversely affected by the gamma rays emitted. The gamma ray exposure received by parking lot attendants and any long-term area transients may pose an imminent and substantial threat to public health.

This site is not on the National Priorities List (NPL).

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II SITE
CHICAGO, ILLINOIS

ORIGINAL
May 2, 1994

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
06/21/93	Karl, R., U.S. EPA	Klinger, J., Illinois Dept. of Nuclear Safety	Letter Illinois Dept. of Nuclear Safety	1
08/18/93	Kouris, T., Ecology & Environment, Inc.	Pfundheller, J., U.S.EPA	Letter re: Site Assessment	4
08/26/93	TMA Eberline	Ecology & Environment, Inc.	Thermoluminescent Dosimeter Badges Data	3
08/27/93	Klinger, J., Illinois Dept. of Nuclear Safety	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
1/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
07/11/94	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum	12

ENFORCEMENT ADDENDUM

Redacted - not relevant to the selection of the removal action.

ATTACHMENT 1

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704
217-785-9900
217-782-6133 (TDD)

Jim Edgar
Governor

Thomas W. Ortciger
Director

August 27, 1993

Mr. Rick Karl, Acting Chief
Emergency and Enforcement Response Branch
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Dear Mr. Karl:

This is in response to your June 21, 1993, request for assistance regarding classification of radioactive contamination at two locations in Chicago and one West Chicago location. We have reviewed all available information concerning these locations and make the following recommendations:

1. 316 East Illinois St., Chicago - Radioactive material at this location should be classified as "source" material. This location was apparently a warehouse facility used in conjunction with the Lindsay Light Chicago gas mantle manufacturing operation.

2. 161 East Grand, Chicago - Radioactive material at this location should be classified as "source" material. This location apparently housed the corporate offices for Lindsay Light and was the manufacturing operation for the gas mantles. However, there is no substantive information that indicates that thorium was actually extracted from ore at this location. Lindsay Light produced thorium nitrate and used it for the gas mantle manufacturing operation, and, in fact, exported thorium nitrate during the period in question. The exact location where the thorium nitrate was produced is unknown. Therefore, the contamination associated with this property must be assumed to be associated with the manufacturing of gas mantles and should be classified as "source" material.

3. 185 West Washington, West Chicago - Our information indicates that this location was used as a laboratory facility in support of Kerr-McGee activities at their West Chicago site. Since all of the contamination associated with the Kerr-McGee West Chicago operations have been determined to be "Byproduct material", the contamination at this location should be classified as "Byproduct Material" as defined in 32 Ill. Adm. Code 332.20.

Please note that the above is based on a careful review of very limited information. If we obtain additional information that alters the above recommendations, we will inform you promptly. We hope this information is helpful and if we can be of additional assistance please contact us.

Sincerely,

Joseph G. Klinger,
Head of Licensing
Division of Radioactive Materials

JGK:ren

ATTACHMENT 2

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II SITE,
CHICAGO, ILLINOIS

May 2, 1994

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
06/21/93	Karl, R., U.S. EPA	Klinger, J., Ill. Dept. of Nuclear Safety	Letter to Ill. Dept. of Nuclear Safety (IDNS)	1
08/18/93	Kouris, T., Ecology & Environment, Inc.	Pfundheller, J., U.S. EPA	Letter re: Site Assessment	4
08/26/93	TMA Eberline	Ecology & Environment, Inc.	Thermoluminescent Dosimeter Badges Data	3
09/27/93	Klinger, J., Ill. Dept. of Nuclear Safety	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
01/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
00/00/00	U.S. EPA	U.S. EPA	Action Memorandum (Pending)	

ATTACHMENT 2

Attachment 3

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II SITE,
CHICAGO, ILLINOIS

UPDATE #1

SEPTEMBER 18, 1995

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
09/00/93	Rogers & Associates Engineering Corporation	Chicago Dock & Canal Trust	Work Plan for Characterization of Radioactive Contamination, 316 East Illinois St., Chicago, Illinois: Appendix E, Supplemental Information; Other Sampling	17
00/00/95	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum (Pending)	12

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II SITE,
CHICAGO, ILLINOIS

May 2, 1994

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
06/21/93	Karl, R., U.S. EPA	Klinger, J., Ill. Dept. of Nuclear Safety	Letter to Ill. Dept. of Nuclear Safety (IDNS)	1
08/18/93	Kouris, T., Ecology & Environment, Inc.	Pfundheller, J., U.S. EPA	Letter re: Site Assessment	4
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08/27/93	Klinger, J., Ill. Dept. of Nuclear Safety	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
01/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
07/11/94	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum	12

ATTACHMENT 3

ATTACHMENT ~~IV~~ 3

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II
CHICAGO, ILLINOIS

UPDATE #2
APRIL 1, 1996

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
00/00/96	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Request for a Time Critical Removal Action at Lindsay Light II Site, Chicago, IL (Pending)	

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II
CHICAGO, ILLINOIS

UPDATE #1
SEPTEMBER 18, 1995

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
09/00/93	Rogers & Associates Engineering Corporation	Chicago Dock & Canal Trust	Work Plan for Characterization of Radioactive Contamination, 316 East Illinois St., Chicago, Illinois: Appendix E, Supplemental; Other Sampling	17
10/05/95	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or the Environment at the Lindsay Light II Site	22

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MEMORANDUM

REPLY TO THE ATTENTION OF

DATE:

SUBJECT: ACTION MEMORANDUM - Determination ~~of Threat to~~ Public Health or the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site ~~Spill ID #YT~~)

FROM: Verneta J. Simon, On-Scene Coordinator Verneta J. Simon
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director
Superfund Divison

I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the results of a Potentially Responsible Party (PRP) lead extent of contamination study at the Lindsay Light II Site, a public parking lot located at 316 East Illinois Street in Chicago, Illinois.

Prior PRP actions were conducted pursuant to an Administrative Order by Consent (AOC) dated January 27, 1994, (please see confidential enforcement addendum) and required the following actions:

1) Develop and implement site health and safety plan.

2) Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.

3) Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.

4) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the PRP to correlate subsurface radiation levels and radionuclide content.

5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

This site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

Please refer to the previous Action Memorandum dated July 11, 1994 for a description of site conditions and background location.

Activities completed at this site, besides the extent of contamination study, have been the PRP (Chicago Dock and Canal Trust) voluntarily placed notices at the entrance to the parking lot informing patrons of the risks associated with the lot. The PRP also appears to have successfully encouraged another company, Kerr-McGee, to participate in site remediation. On September 8, 1995, U.S. EPA, Chicago Dock and Canal Trust, and Kerr-McGee met to discuss the framework of future site remediation including the drafting of either an AOC or Unilateral Administrative Order (UAO) to implement remediation work by the PRPs.

III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Please refer to Section III of the attached Action Memorandum dated July 11, 1994.

IV. ENDANGERMENT DETERMINATION

Please refer to Section IV of the attached Action Memorandum dated July 11, 1994.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

Pursuant to the AOC or UAO, the PRP will fully remediate the site until maximum protectiveness of the human health and the environment is achieved. This will involve at a minimum the following actions.

1) Develop and implement site health and safety plan.

2) Conduct off-site radiological surveying and sampling as necessary and, at a minimum implement 40 CFR 192 if deemed necessary should extensive contamination be discovered beyond current site boundaries.

3) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of future response actions should

eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of Federal law will be complied with to the extent practicable. A letter was sent on August 25, 1995, by Kerr-McGee to the Illinois Department of Nuclear Safety (IDNS) requesting that the IDNS change the waste designation from this site to 11(e)2 "by-product" material and this request is contained in Attachment 1. Correspondence dated August 27, 1993 from the IDNS stated waste from this site should be called "source" material. Once Kerr-McGee receives a response from the IDNS, the waste designation issue should be finally resolved and incorporated into the remediation of this site.

In accordance with the revised NCP, Section 300.825(a)(1), the response from the State to the request for ARARs will be added to the administrative record for this site once the response has been received and evaluated.

VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Please refer to Section VI of the attached Action Memorandum dated July 11, 1994.

VII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

X. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE: Wm. E. Muno 10/5/95
DIRECTOR, SUPERFUND DIVISION

DISAPPROVE: _____
DIRECTOR, SUPERFUND DIVISION

Attachments: Enforcement Confidential Addendum
1. Letter Dated August 25, 1995 from Kerr-McGee to the Illinois Department of Nuclear Safety (without enclosures)
2. Action Memorandum dated July 11, 1994
3. Index to the Administrative Record

cc: Terri Johnson, OS-210
Don Henne, U.S. Department of the Interior
Office of Environmental Policy and Compliance
U.S. Custom House, Room 217
200 Chestnut Street
Philadelphia, PA 19106
Gary King, IEPA Superfund Coordinator

ENFORCEMENT ADDENDUM

Redacted - not relevant to the selection of the removal action.